

***United States Court of Appeals  
for the Second Circuit***



**APPELLANT'S  
APPENDIX**





74-2014

UNITED STATES COURT OF APPEALS  
For the Second Circuit

DOCKET NO. 74-2014

UNITED STATES OF AMERICA

Appellee,

vs.

GARY KINSEY

Defendant-Appellant

On Appeal from Judgment of Conviction in the Western District  
of New York.

APPENDIX TO BRIEF OF THE DEFENDANT-APPELLANT

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PAGINATION AS IN ORIGINAL COPY



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UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF NEW YORK

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UNITED STATES OF AMERICA,

Plaintiff-Appellee

vs.

Cr-1973-303

GARY KINSEY

Defendant-Appellant

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INDEX OF RECORD ON APPEAL

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EXHIBITS

1. Copy of sheet from Dr. Shultes report of Feb. 1970, page 360, G-9
  2. Exhibit D-6 - to be supplied by Defense counsel with brief
  3. 5 Burlap bags of marihuana, containing approx. 100 lbs. of marihuana (Retained by the Govt.)
- /.

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF NEW YORK

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UNITED STATES OF AMERICA,

Plaintiff, Appellee

vs.

GARY KINSEY

Defendant-Appellant

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Cr-1973-303  
Court of Appeals  
No. 74-8169

SUPPLEMENTAL INDEX TO RECORD ON - APPEAL

In addition to the Seven (7) items listed on the Index To Record on Appeal, previously certified and filed in the above-captioned appeal, the following items are herewith added to that list by way of a certified supplemental index.

8. Court Stenographer's transcript of testimony of Jeffrey Weber and Dr. Arthur Cronquist taken during trial on March 26, 1974, Rochester, N.Y.

Transcript of testimony of Dr. Thomas Ferrari, and excerpts of proceedings taken during trial on March 27, 28, 29, 1974, Rochester, N.Y.



# In the District Court of the United States

For the Western District of New York

THE UNITED STATES OF AMERICA

-vs-

GARY KINSEY

MARCH 1973 SESSION  
IMPANELED July 9, 1973

No. 1973 303

Vio. T. 21, U.S.C.,  
§841(a)(1)

The Grand Jury charges:

On or about the 29th day of August, 1973, in the Western District of New York, the defendant, GARY KINSEY, did knowingly, intentionally and unlawfully possess with intent to distribute approximately 48,578 grams of marihuana, a Schedule I controlled substance as set forth in Title 21, United States Code, Section 812 (21 CFR §308.11(d)(10)); all in violation of Title 21, United States Code, Section 841(a)(1).

JOHN T. ELFVIN  
United States Attorney

BY:

RICHARD J. ARCARA  
First Assistant United States Attorney

IN THE DISTRICT COURT OF THE UNITED STATES  
FOR THE WESTERN DISTRICT OF NEW YORK

THE UNITED STATES OF AMERICA,  
Plaintiff,

-vs-

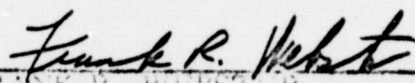
NOTICE OF APPEAL

GARY KINSEY

Defendant.

Notice is hereby given that Gary Kinsey, Defendant in the above entitled action, hereby appeals to the United States Court of Appeals for the 2<sup>nd</sup> Circuit, from the final judgment entered in this action on the 22<sup>nd</sup> day of April, 1974.

4/22, 1974.

  
FRANK R. WEBSTER  
Attorney for Defendant  
600 Wilder Building  
Rochester, New York 14614  
454-6820



UNITED STATES COURT OF APPEALS

Second Circuit

JUN 14 1974



At a Stated Term of the United States Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the Tenth day of June, one thousand nine hundred and Seventy-four.

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United States of America,

Plaintiff-Appellee,

v.

Gary Kinsey,

Defendant-Appellant.

---

It is hereby ordered that the motion made herein by Frank R. Webster, Esquire counsel for the

	<b>Gary Kinsey</b>		
appellant/	appellee	petitioner	respondent
	<del>XXXXXXXX</del>	<del>XXXXXXXX</del>	<del>XXXXXXXX</del>

by notice of motion dated May 30, 1974 for leave to proceed in forma pauperis and to be appointed as counsel on appeal, under the Criminal Justice Act

be and it hereby is ~~granted~~ denied

**DENIED.**

~~It is further ordered that~~  
~~XXXXXXXXXXXXXXXXXXXX~~

5.

---

IRVING R. KAUFMAN, Chief Judge.

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UNITED STATES COURT OF APPEALS

Second Circuit



At a Stated Term of the United States Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the **twenty-seventh** day of **June**, one thousand nine hundred and **seventy-four**.

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United States of America,

Plaintiff-Appellee,

v.

Gary Kinsey,

Defendant- Appellant

---

JUL 3 1974

Frank R. Webster, Esq.

It is hereby ordered that the motion made herein by counsel for the

appellant/ **Gary Kinsey**  
~~appellee~~

~~petitioner~~

~~respondent~~

~~by notice of motion~~ dated **June 24, 1974** for leave to file xeroxed  
briefs and appendix

be and it hereby is granted ~~denied~~

**GRANTED**

~~It is further ordered that~~  
~~XXXXXXXXXXXXXXXXXXXX~~

6.

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IRVING R. KAUFMAN, Chief Judge.

---



Rochester, New York

Wednesday, March 27, 1974

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MR. HOULIHAN: The Government rests its case, your Honor.

MR. WEBSTER: The defense would like to make some motions out of the presence of the jury.

THE COURT: Before I dispose of that, are you prepared to go with any testimony today?

MR. WEBSTER: I would rather not, your Honor, and start fresh in the morning and hope to be finished by the end of the morning.

THE COURT: All right. I will excuse the jury, then, until tomorrow morning at 10:00 o'clock.

(The jury left the courtroom.)

MR. WEBSTER: Will you take the motions at this time?

THE COURT: Yes, right now.

MR. WEBSTER: Your Honor, the motion

7.

1 by Gary Kinsey at the end of the Govern-  
2 ment's case is based upon the fact that  
3 the Government has failed to come forward  
4 with a prima facie case and on two issues,  
5 particularly the fact of whether or not  
6 the substance tested was or was not mari-  
7 huana or Cannabis sativa as the statute  
8 states and on that basis I believe that  
9 in the course of cross examination the  
10 chemist for the Government testified that  
11 there was an expert to his knowledge out  
12 of Harvard University that had identified  
13 more than one species of marihuana; that  
14 there was another expert that concurred  
15 with that Harvard botanist and I believe  
16 he was either from Detroit or Chicago.  
17 And that with that testimony alone from  
18 that chemist it is my belief that a  
19 reasonable doubt was raised as to whether  
20 or not tests of the items here were tested  
21 for marihuana or whether they were tested  
22 for Cannabis sativa L. or whether they  
23 would ever show a test for any other of  
24 the cannabinoids or plants of a different  
25 species, namely ruderalis or non-indica,

8.



et cetera.

THE COURT: This Government witness testified unequivocally that his analysis showed these samples to contain marihuana. There wasn't any equivocation about it at all.

MR. WEBSTER: That's correct, your Honor, and the next question is what kind of marihuana? The statute in the Congressional Record says, "Cannabis sativa L., meaning Linnaeus." And he did not test for Cannabis sativa L. He tested for marihuana, generally, which is a generic name for a whole group of plants which he testified himself to. That expert realized or recognized there are other species of marihuana that are not covered by the statute.

THE COURT: Then your point is that there is a reasonable doubt?

MR. WEBSTER: That's correct.

THE COURT: And if there is the jury will resolve it. I never resolve what is a reasonable doubt.

MR. WEBSTER: I would say, your Honor,

1 Rochester, New York

2 Thursday, March 28, 1974

3 10:00 o'clock A.M.

4  
5 - - -  
6 (Jury present.)

7 MR. WEBSTER: Your Honor, I believe  
8 the prosecution rested yesterday and the  
9 defense will commence its case at this  
10 time by calling Dr. Ferrari.

11  
12 D R. T H O M A S F E R R A R I,  
13 called as a witness by the defendant, being first duly  
14 sworn, testified as follows:

15 DIRECT EXAMINATION

16 BY MR. WEBSTER:

17 Q You are Dr. Thomas Ferrari?

18 A Yes.

19 Q Where do you reside?

20 A Urbana, Illinois.

21 Q And what is your business presently?

22 A I am a research scientist at the University of Illinois.

23 Q And you have been asked to testify by me regarding this  
24 particular matter pending before this Court, is that  
25 correct?



1 does establish that basis.

2 THE COURT: He is a botanist with  
3 several degrees. He doesn't need to  
4 establish any more than he has already.  
5 I will accept his testimony.

6 THE WITNESS: Normally plants can  
7 be categorized into groups based upon a  
8 system set up by the father of taxonomy,  
9 Linnaeus who resided in Europe in approxi-  
10 mately 1707 to 1778. He devised a system  
11 in placing plants into two groups based  
12 on physical or anatomical features and  
13 these fall into the group which you see  
14 here (indicating): Kingdom phylum plant  
15 order, genus, species and variety.

16 Now scientists throughout the world  
17 use these techniques for identifying a  
18 plant, finding out its name and finding  
19 to which genus or species it belongs.  
20 This is the lower two categories, the  
21 second and third lowest categories on  
22 the board (indicating). These are the  
23 most useful as far as scientists are  
24 concerned. They often refer to Latin  
25 names such as for example in the case

//.

1 where we are concerned with Cannabis or  
2 the species named sativa. Most people  
3 are familiar with that one or ruderalis  
4 or indica and there are a few characteris-  
5 tic plants which haven't been accepted by  
6 authorities all over the world and they  
7 are indicated on the right upper corner  
8 underneath "Americana and known indica."  
9 Usually after the species named in the  
10 upper right-hand corner you see sativa  
11 L. or J. or Lam.

12 THE COURT: What does the "L" stand  
13 for?

14 A You see at the end of the name a "L.", or "J.", or "Lam."

15 THE COURT: We see "L." That is  
16 what I am talking about.

17 A And it refers to the scientist's name who discovered this  
18 species, categorized it and described its physical charac-  
19 teristics. "Lam." refers to Lamark. And "L." refers to  
20 Linnaeus. These are the scientists' names and he is given  
21 credit for identifying these species.

22 Q And the "J"?

23 A That is a Russian name. I have got it written down.

24 Q Is it "Janworski" or something?

25 A It sounds something similar to that.



1 Q And "Lam."?

2 A That is Lamark and he is a French scientist.

3 THE COURT: Here is what I am con-  
4 fused about. On the top there "Cannabis  
5 sativa L.," you say that "L." stands for  
6 Lamark?

7 A No, that is Linnaeus, L-i-n-n-a-e-u-s. "Lam." stands for  
8 Lamark.

9 THE COURT: I want you to get exactly  
10 what I am asking you. It says, "Cannabis  
11 sativa," and after that there is an "L."  
12 What does that "L." stand for?

13 A The "L." stands for "Linnaeus."

14 THE COURT: That is a scientist's  
15 name?

16 A Yes, that is a scientist's name.

17 THE COURT: That is all I want to  
18 know.

19 Q That is a scientist's name?

20 A Yes, that is another scientist. These are the scientists  
21 who found these species and categorized them, based upon  
22 their structural characteristics and for example you can  
23 go to an anatomy book and look up Cannabis ruderalis J  
24 and you can find the different physical or structural or  
25 morphological characteristics which differentiate it from

1 Cannabis ruderalis J., Cannabis indica Lamark, are they  
2 three different species?

3 A They are three different species.

4 Q What genus?

5 A Cannabis.

6 Q And there is no doubt about that in your mind, is there?

7 A No.

8 Q Doctor, I would like to get into the chemical aspects and  
9 testing devices used to determine Cannabis, the genus  
10 Cannabis or its species. Are you familiar, first of all,  
11 with certain tests or techniques to determine what they  
12 are?

13 A Yes.

14 Q And chemically, what are they that you know?

15 A The techniques used frequently for identification of  
16 Cannabis are microscopic examinations, the Duquenois test  
17 or its modification and thin layer chromatography.

18 Q Any other tests that you are familiar with?

19 A They can use gas chromatography or mass spectroscopy or  
20 infrared spectroscopy.

21 Q I call your attention to the microscopic examination based  
22 on this hypothetical testimony previously received from  
23 Mr. Weber, the Government's witness, that he observed a  
24 specimen of the alleged substance in this case, vegetable  
25 material under a 100-power microscope and he saw cystolith



1 Q Are you familiar with that instrument and what is it, if  
2 you remember?

3 A A mass spectrometer is an instrument used by scientists  
4 to determine the molecular weight of a compound, a molecule.

5 Q What is your experience with this instrument, if any?

6 A At Michigan State University I used one to determine various  
7 isotopes of  $\text{CO}_2$ , carbon dioxide.

8 Q How long did you work on this particular instrument?

9 A Approximately six months.

10 Q And approximately how many hours a day?

11 A Anywhere from two or four hours a day.

12 Q And assuming that a specimen would be placed in the mass  
13 spectrometer what would be the reliability of that testing  
14 device?

15 A It would a thousand times out of a thousand give you the  
16 molecular weight of the compound you put in it.

17 Q And as far as identification of the substance, how accurate  
18 would it be, and reliability?

19 A It would be very reliable.

20 Q Do you have an estimate percentagewise, its reliability  
21 compared -- well, by itself, first of all?

22 A 99.9 per cent sure.

23 Q By comparison of the mass spectrometer with the microscopic  
24 as far as its accuracy in identifying substances such as  
25 the substance alleged here, the marihuana?

- 1 A Very little comparison.
- 2 Q And meaning what?
- 3 A One would be extremely unreliable and the other one would
- 4 be very reliable.
- 5 Q And in comparison with the mass spectrometer with the
- 6 Duquenois-Levene or modified Duquenois test?
- 7 A Slightly more reliable than the cystolith hair method but
- 8 still very unreliable compared to the mass spectrometer.
- 9 Q And the third category being thin layer chromatography
- 10 compared to the reliability with the mass spectrometer?
- 11 A The thin layer chromatography would again be quite inferior
- 12 to mass spectroscopy.
- 13 Q Doctor, assume that you took the three tests together,
- 14 namely, the microscopic examination taking the substance
- 15 in question, this plant material and taking the thin layer
- 16 chromatography and the Duquenois, modified Duquenois or
- 17 Duquenois-Levene test on one substance compared to the
- 18 mass spectrometer, do you have an opinion as to its
- 19 reliability?
- 20 A I would consider them unreliable in combination.
- 21 Q Compared to the mass spectrometer, is that correct?
- 22 A That's correct.
- 23 Q And by themselves without comparison with the mass spectro-
- 24 meter what would be your opinion?
- 25 A Say that again.



1 I am from Illinois.

2 Q What grows wild?

3 A Cannabis.

4 Q And you are talking about the species Cannabis?

5 A No, I am talking about the genus Cannabis.

6 Q You mean all five of these different species grow wild in  
7 Illinois?

8 A Repeat that.

9 Q You have claimed that there are at least three and possibly  
10 five different species of Cannabis.

11 A Yes.

12 Q And are you telling me that all of them grow wild in  
13 Illinois?

14 A No, I am not telling you that.

15 Q And what is the species that you claim grows wild in  
16 Illinois?

17 A It is a species which has an opposite leaf pattern.

18 THE COURT: Is that another one  
19 besides the five?

20 A I don't know. It is definitely different from Cannabis  
21 sativa. Cannabis sativa has an alternate leaf pattern.  
22 The species which I found in Illinois has an opposite  
23 leaf pattern.

24 Q Were you able to classify this --

25 A No. I could not do that. I am not an expert taxonomist.

1 expert.

2 THE COURT: He said that he was an  
3 authority in the field.

4 A Yes.

5 Q Do you know what the term "polytypic" means?

6 A I believe so.

7 Q Could you tell us what it means?

8 A Minor variations in species such as color.

9 Q Then are you familiar with the term monotypic?

10 A Yes.

11 Q Can you define that for us?

12 A One type, one characteristic, no other characteristics  
13 possessed by other plants.

14 Q When you speak of characteristics and variations, in  
15 defining those terms you don't mean species -- you mean  
16 "variations," is that correct?

17 A I mean morphological or color traits. Well, I don't quite  
18 follow your question.

19 Q When you say "variations," in defining the term polytypic  
20 and monotypic, you are talking about varieties of one  
21 species, is that correct?

22 A In the case of polytypic. In the case of monotypic there  
23 are no variations.

24 Q The words don't refer to species -- they refer really to  
25 like color?



1 A Yes.

2 Q I direct your attention to Dr. Schultes' article, and  
3 Botanical Museum leaflets, Harvard University, February  
4 28, 1974, Volume 23, No. 9 and I ask you to read on Page  
5 340, read the second paragraph on that page.

6 A (Reading): "Although the taxonomic literature on Cannabis --"

7 MR. WEBSTER: I am going to object,  
8 your Honor, to him reading something that  
9 has not been marked or put in evidence.

10 THE COURT: Objection is overruled.

11 Q Please continue.

12 A (Reading): "Although the taxonomic literature on Cannabis  
13 is complicated by a confusing plethora of specific and  
14 varietal names, most of which have not or have never been  
15 properly published or described. According to the rules  
16 of botanical nomenclature the genus has been and still is  
17 generally considered to be monotypic."

18 Q Can you tell me what that means?

19 A Generally considered by authorities to be monotypic.

20 Q That means it only has one color?

21 A As an example.

22 Q As an example?

23 A Yes.

24 MR. WEBSTER: May we have that  
25 marked as an exhibit so that I may

1 A Cannabis.

2 Q So if we put those two tests together we are not talking  
3 about extrapolating 250,000 plants. We are talking about  
4 extrapolating 600 plants, is that right?

5 A I don't think so. They may have all had cystolith hairs.  
6 I can't say.

7 Q You said that according to this, the twenty-five plants  
8 that Dr. Maunder applied some Duquenois tests to gave him  
9 a positive reaction. Then you said as compared to the  
10 250,000 plants that would be approximately 25,000 plants  
11 that could possibly give a positive Duquenois?

12 A Yes, I said that, yes, conservative.

13 Q But if you joined both tests together that extrapolation  
14 isn't correct, is it?

15 A Per se, no.

16 Q And thin layer chromatography?

17 A Thin layer chromatography.

18 Q You mentioned in your examination that it was possible  
19 that other substances could affect the examination among  
20 the substances placed on that plate?

21 A That's correct.

22 THE COURT: Counsel, this is one  
23 of the practicalities that we have to  
24 look at in a lawsuit. You told me yester-  
25 day that you had a witness here that you



1 Q You also mentioned that the chemical tests that we have  
2 just talked about would not be able to distinguish between  
3 different species of marihuana, was that your statement?

4 A That was my statement.

5 Q Now wouldn't that fact alone be some evidence that there  
6 are no other species?

7 A No. May I explain?

8 Q Sure.

9 A Cannabis sativa, Cannabis indica and Cannabis non-indica  
10 have been used by Maunder and he has found that they all  
11 give positive tests. It can not distinguish between the  
12 species.

13 MR. HOULIHAN: I have no further  
14 questions.

15 MR. WEBSTER: Your Honor, I have a  
16 few questions on redirect, and I hope to  
17 be brief.

18 REDIRECT EXAMINATION

19 BY MR. WEBSTER:

20 Q What are cystolith hairs, if you know?

21 A Cystolith hairs are excretions of calcium carbonate by the  
22 plant leaf, extending from the leaf surface. They look  
23 comb-shaped and they have a precipitate calcium carbonate.

24 Q And does that precipitate?

25 A Calcium carbonate is found in numerous other plants and

1 just normal marihuana.

2 Q How do you recall that?

3 A Because I didn't make any special notes as to the strength.  
4 If a sample is extra-strong we will quantitate it because  
5 there might be some significance to that and since this  
6 wasn't quantitated it was just a normal sample.

7 Q It could be weak or it could be medium, is that correct?

8 A No. It was an average marihuana sample.

9 Q You said when it is strong you sometimes quantitate it.

10 A That's correct.

11 Q You don't quantitate it when it is weak?

12 A No, I do not.

13 Q What is the reliability of this particular test, that is,  
14 the thin layer chromatography test?

15 A This test is very reliable.

16 Q On what basis do you give us that opinion?

17 A On the basis that it is identifying three separate and  
18 distinct substances, not only by how far they travel up  
19 the plate but by the color they turn when you spray it  
20 with the Fast blue B.

21 Q What is the  $R_f$  factor on the test?

22 A The  $R_f$  is the distance that it travels.

23 Q What is the interpretation on the  $R_f$  factor?

24 A There is no interpretation because you are using a  
25 standard marihuana. If there was no standard you would



- 1 Q Now the microscopic analysis that you made on Government's  
2 Exhibit 2-A through 2-E, did they show the presence of  
3 cystolith hairs?
- 4 A Yes, they showed the presence of cystolith hairs.
- 5 Q That is a positive test for marihuana, is that correct?
- 6 A That is one of the tests I used for the presence of  
7 marihuana, yes.
- 8 Q Now the second test that you performed was the Duquenois-  
9 Levene test?
- 10 A That's correct.
- 11 Q And that is not the Duquenois test? That is a modification  
12 of that and that makes it more reliable?
- 13 A That's correct.
- 14 Q And what was the result of that test?
- 15 A I found all five bags to give a positive result for the  
16 presence of marihuana.
- 17 Q And the third test that you performed, the thin layer  
18 chromatography, what was the result of that test?
- 19 A I found the substance in all five bags to contain the  
20 constituents of marihuana plants, tetrahydrocannabinol,  
21 cannabidiol and cannabinol.
- 22 Q When you have performed the thin layer chromatography test  
23 you compared it against a standard?
- 24 A That's correct.
- 25 Q And where did you obtain the standard?

1 Q Dr. Cronquist, leaving out that particular portion of  
2 your experience, could you relate to us the basis for  
3 your opinion that there is only one species?

4 A I have had occasion to look into the literature and to  
5 talk with those people who are doing the most extensive  
6 work on the taxonomy of Cannabis. And I have had occasion  
7 both to read and to hear extensive verbal presentation by  
8 Schultes who is the fountainhead of the new school of  
9 thought that there are three species of Cannabis.

10 THE COURT: He is that Harvard  
11 professor whose works have been read  
12 here this morning?

13 A Yes, that's correct. Schultes is the fountainhead of  
14 this recently revived school of thought that there is  
15 more than one species of Cannabis and has been brought  
16 out in the testimony that this is something in which he  
17 has only recently taken that position.

18 MR. WEBSTER: Your Honor, I am  
19 going to object again and ask that the  
20 response of the witness be stricken as  
21 not responsive to the U. S. Attorney's  
22 question.

23 THE COURT: The motion is denied.

24 THE WITNESS: As recently as 1970  
25 in the paper which was noted here he



1 reflects a danger to cultivation in the things that hold  
2 the seeds.

3 Q Just to clear it up in my own mind, they would not then  
4 mean it would indicate it is a different species?

5 A No, not necessarily. It would be a basis for considering  
6 whether it might be. On the basis of the rest of the  
7 evidence it is the usual taxonomic opinion and mine that  
8 it is not a different species. Dr. Vavilov did study this  
9 very considerably and in the paper that I have here --  
10 and it is in Russian -- he points out that the material  
11 of ruderalis hybridizes extensively with the cultivated  
12 materials wherever they grow together. That is, wherever  
13 you cultivate Cannabis in an area where ruderalis is also  
14 present they hybridize extensively with no indication of  
15 loss of fertility, thus there is no real gap in the  
16 variability there.

13 17 Q If I can put that in language that I can understand, this  
18 means that they mate with each other?

19 A Right, exactly.

20 Q That is significant in determining whether there are  
21 different species?

22 A That is right. That is not the only feature one considers  
23 in determining whether things are definite species but  
24 all specific concepts now include cross-breeding as an  
25 integral part of the question. I don't know whether I

1 have really finished that. Ruderalis is the only one  
2 that you really could begin to make a case for some sort  
3 of recognition. But even then it should be within or  
4 below the species, less than specific significance. A  
5 variety or a sub-species, if you use sub-species and  
6 furthermore it has never been alleged to grow in America.  
7 It is a wild plant, weedy but wild, truly wild of Central  
8 Asia.

9 Now we have Cannabis that appears to be wild in  
10 this country but that is run wild after cultivation --  
11 but it is not the same as being a truly wild plant. All  
12 of the Cannabis in America, North and South, is introduced  
13 and it is introduced from cultivated materials. There  
14 is no evidence that I know of to suggest that anything  
15 that could properly be called ruderalis, even if you  
16 recognize ruderalis, is in the Americas. It is a wild  
17 plant confined to essentially Central Asia. In this  
18 paper of Vavilov he goes into this in great detail and  
19 eventually he makes a new combination and calls it  
20 Cannabis sativa variety, ruderalis. Just to make sure  
21 that I don't mislead anybody I can say that you can find  
22 other papers by Vavilov in which he makes casual reference  
23 to Cannabis and uses all three names. So just from a  
24 formal reading or checking literature you can find him  
25 on both sides of the fence. But the only paper that I



1 have been able to find in which he discusses the matter  
2 and indicates the reason for his opinion, and I believe  
3 I find his reasons very convincing, is the one I mentioned  
4 in which he says that it is all one species.

5 Now furthermore, in the Russian literature there is  
6 some precedence for recognizing three species in the  
7 Russian literature. Mostly, however, not in the literature  
8 by people who are professional taxonomists. The taxonomists  
9 are the ones who supposedly at least have the knowledge and  
10 the background and the expertises to reach an opinion.  
11 Thus in the "Flora of the USSR," they recognize ruderalis  
12 as a separate species. They give some indication that  
13 they are not really happy about it but they recognize it.  
14 And then they clearly say that indica is nothing but  
15 sativa. So Flora of the USSR, the most standard reference  
16 work for competent taxonomic opinion in the USSR. I  
17 should point out and I hope that I will be permitted to  
18 digress just a little bit to explain, that because of a  
19 historical combination of circumstances which I won't  
20 explain unless I am asked to, but because of a historical  
21 combination of circumstances well understood by biologists --

22 MR. WEBSTER: Your Honor, I am going  
23 to object to this educational lecture and  
24 ask him to answer the question.

25 THE COURT: Objection is overruled.

Rochester, New York

Friday, March 29, 1974

(Trial resumed, jury present.)

CHARGE OF THE COURT

THE COURT: \* \* \*

When Congress used the term marihuana and defined it as all parts of the plant Cannabis sativa L., it was using a scientific name. When Congress used that term Cannabis sativa L., it meant to and did include Cannabis ruderalis J. and Cannabis indica LAM. The meaning of Cannabis sativa L. was understood by Congress when it enacted the statute. I instruct you as a matter of law that you are not left now to conclude from the testimony of the experts who have testified before you what the meaning of the term Cannabis sativa L. is, either the defendant's expert or the Government's experts. I instruct you as



1 a matter of law that the term marihuana  
2 means all parts of the plant Cannabis  
3 sativa L. and further that Cannabis  
4 sativa L. includes Cannabis ruderalis J.  
5 and Cannabis indica LAM.  
6  
7 \* \* \*8

9 THE COURT: Now I have gotten from  
10 the Government and also from the defend-  
11 ant certain requests to charge.

12 I will charge exactly as they are  
13 in the case of the Government's request  
14 and I will charge them in part as far as  
15 the defendant's request.

16 Government's Request to Charge No.  
17 1, reads as follows:

18 "The testimony in this case included  
19 expert opinions on the issue of whether  
20 or not there are three species of mari-  
21 huana. You are instructed as a matter  
22 of law that Congress intended to include  
23 in the definition of marihuana all forms  
24 of Cannabis. You are further instructed  
25 as a matter of law that marihuana is a  
controlled substance. You are therefore

1 a certain part I will not charge but I  
2 will file the charge so the record will  
3 show what I have excluded.

4 I charge you that the Federal  
5 Statute defines marihuana under Section  
6 802(15) as follows:

7 "The term 'marihuana' means all  
8 parts of the plant Cannabis sativa L.,  
9 whether growing or not; the seeds there-  
10 of, the resin extracted from any part of  
11 such plant; and every compound, manu-  
12 facture, salt, derivative, mixture, or  
13 preparation of such plant, its seeds or  
14 resin. Such term does not include oil  
15 or cake made from the seeds of such  
16 plant, any other compound, manufacture,  
17 salt, derivative, mixture, or preparation  
18 of such mature stalks (except the resin  
19 extracted therefrom), fiber, oil, or  
20 cake, or the sterilized seed of such  
21 plant which is incapable of germination."

22 "If you find that the defendant had  
23 possession of Cannabis, this is not  
24 enough to render a verdict of guilty,  
25 you must further find beyond a reasonable



1 doubt that the defendant knowingly and  
2 unlawfully possessed Cannabis sativa L."

3 Then there follows a certain portion  
4 which I decline to charge and the record  
5 will show what it is. Then continuing  
6 to part of the same request: I charge  
7 you that the Government has the burden  
8 of proving its case as to each and every  
9 element of the charge beyond a reasonable  
10 doubt. If you find that there is a  
11 reasonable doubt, that doubt must be  
12 resolved in favor of the defendant.

13 Any requests or exceptions?

14 MR. HOULIHAN: No exceptions, your  
15 Honor.

16 MR. WEBSTER: No exceptions or  
17 requests. I thank you.

18 THE COURT: This is the defendant's  
19 request to charge and I am filing it  
20 because I have excluded part of it.

21 (Defendant's Request to Charge reads  
22 as follows: )

23 "I charge you that the Federal  
24 Statute defines marihuana under Section  
25 802 (15) as follows:

1 "The term 'marihuana' means all parts  
2 of the plant Cannabis sativa L., whether  
3 growing or not; the seed thereof; the  
4 resin extracted from any part of such  
5 plant; and every compound, manufacture,  
6 salt, derivative, mixture, or preparation  
7 of such plant, its seeds or resin. Such  
8 term does not include oil or cake made  
9 from the seeds of such plant, any other  
10 compound, manufacture, salt, derivative,  
11 mixture, or preparation of such mature  
12 stalks (except the resin extracted there-  
13 from), fiber, oil, or cake, or the  
14 sterilized seed of such plant which is  
15 incapable of germination."

16 "If you find that the defendant had  
17 possession of Cannabis, this is not  
18 enough to render a verdict of guilty,  
19 you must further find beyond a reasonable  
20 doubt that the defendant knowingly and  
21 unlawfully possessed Cannabis sativa L.  
22 If you find from all the evidence that  
23 there is more than one species of Canna-  
24 bis, namely: Cannabis Ruderalis, or  
25 Cannabis Indica, then you must acquit.



1 "Further, if you find that there is more  
2 than one species of Cannabis and the  
3 Government has not proved to you beyond  
4 a reasonable doubt that the evidence in  
5 this case was Cannabis sativa L., then  
6 you must acquit. I charge you that the  
7 Government has the burden of proving  
8 their case as to each and every element  
9 of the charge beyond a reasonable doubt.  
10 If you find that there is a reasonable  
11 doubt, that doubt must be resolved in  
12 favor of the defendant.)"

13 \* \* \*

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16, 26, 27), that chemical differences in *Cannabis* appear to be based more on a genetic basis than on environmental or edaphic factors. If this be so, then it may add still another argument for specific differentiation in the genus.

Vavilov and Bukinich, for example, after long field studies in Afghanistan, maintained that *Cannabis* comprised several species (30). In the *Flora of the U.S.S.R.*, Komarov accepted the polytypic nature of the genus (10). Zhukovsky, in his masterly *Cultivated Plants and their Wild Relatives*, accepts three species of *Cannabis* and indicates their morphological differences (31). In 1960, Sojak asserted that *Cannabis ruderalis* is spreading westward into Europe proper and described  $\times C. intersita$ —a hybrid between *C. ruderalis* and *C. sativa*—on the basis of a Wallich collection in 1831 (23). The *Flora Europaea* accepts a polytypic composition of *Cannabis*, listing *C. sativa* and *C. ruderalis*—and this in a modern synthetic work which states that “all available evidence, morphological, geographical, ecological and cytological has been taken into consideration in delimiting species. . . . [but which] are in all cases definable in morphological terms” (23).

While we recognize our present incomplete knowledge of characters, we offer the following key to distinguish the several species discussed above.

- 1) Plants usually tall (up to five to 18 feet), laxly branched  
Akenes smooth, usually lacking marbled pattern on outer coat,  
firmly attached to stalk and without definite articulation  
*C. sativa*
- 1A) Plants usually small (four feet or less), not laxly branched  
Akenes usually strongly marbled on outer coat, with a definite  
abscission layer, dropping off at maturity
- 2) Plants very densely branched, more or less conical, usually  
four feet tall or less. Abscission layer a simple articulation at  
base of akene  
*C. indica*
- 2A) Plants not branched or very sparsely so, usually one to two  
feet at maturity. Abscission layer forms a fleshy caruncle-like  
growth at base of akene  
*C. ruderalis*

[ 360 ]

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**The Botany  
and Chemistry  
of Hallucinogens**  
~~~~~

By

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Director and Curator of Economic Botany  
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Cambridge, Massachusetts*

and

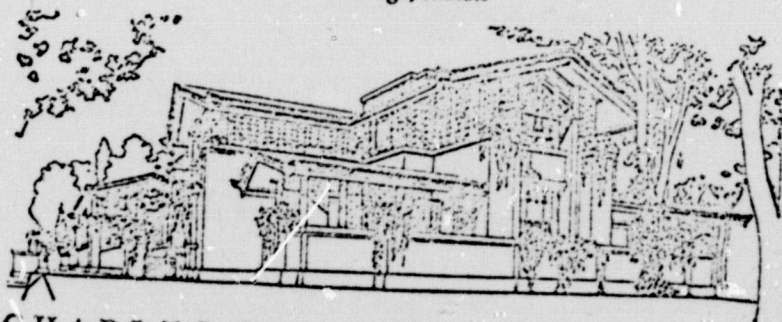
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Division of Natural Products, Sandoz Ltd.  
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**CHARLES C THOMAS • PUBLISHER**  
*Springfield • Illinois • U.S.A.*

EX D-6

4

as an intoxicant, *Cannabis* is still characterized more by what we do not know botanically about it than what we know.

Lack of knowledge about *Cannabis* and its utilization as a narcotic not only provides an obstacle to an understanding of moral, legal, sociological and economic phases of its importance to the cultures where its use has become established, but even many technical aspects—botanical, chemical, pharmacological, medical and public health—are fraught with contradictions and uncertainties.

Botanists have long tended to believe *Cannabis* to be monotypic and that its one polymorphic species, *C. sativa*, has diversified into many ecotypes and cultivated races. The non-taxonomic literature is plagued by a plethora of technical names for the variants of *C. sativa*. Furthermore, in agricultural, horticultural, chemical and pharmacological publications, it is not uncommon to find Latin binomials that have no validity, since they were never published in accordance with the internationally-recognized rules of botanical nomenclature.

As early as 1869, De Candolle recognized what he considered to be true botanical varieties of *C. sativa*, offering detailed descriptions of them:  $\alpha$  *kif*,  $\beta$  *vulgaris*,  $\gamma$  *pedemontana*,  $\delta$  *chinensis*.<sup>189</sup> Botanists do not now accept true varieties within *C. sativa* because they cannot define them, and even the agricultural and pharmacological specialists who sometimes treat them as though they were true varieties admit that they are not stable.<sup>189,237</sup> It must be recognized that this problem has arisen primarily because of a confusion of concepts: the true botanical *varietas* is genetically distinct, whilst the polymorphism rampant in *C. sativa* may be non-genetic, giving rise to variations that might better be called races, ecotypes, cultivars, chemovars or other appropriate terms.<sup>189</sup>

Although most modern botanists have held that *Cannabis* is monotypic, there has been opinion to the contrary for many years. Lamarck described *C. indica* in 1783 as a species of "India," distinguishing it from *C. sativa* in growth habit and morphological characteristics and implying, by detailing its strong narcotic properties, that it was more potent than *C. sativa*.

Through the years, most taxonomists have tended not to recognize *C. indica* as distinct, but the binomial—or the alternate *C.*



*sativa* var. *indica*—has persisted in the chemical and pharmacological literature.

In 1924, Janischewsky described *C. ruderalis* as a species differing from *C. sativa* primarily in morphology of the achene and size of stem and leaves and ranging from northern European Russia into western Siberia and central Asia. Other Russian botanists who have studied *Cannabis* in the field maintain that the genus comprises several species.

Notwithstanding the great economic importance of *Cannabis* and its long association with man and agriculture, little taxonomic work has been carried out on the genus. From the period of Linnaeus and Lamarck to the recent Russian studies, no taxonomic botanists have focussed research specifically on the genus *Cannabis*. Schultes and his colleagues, who have very recently initiated taxonomic and cytologic investigations, now believe that the genus comprises three species: *C. sativa*, *C. indica*, and *C. ruderalis*.

What differences, if any, exist in the chemical composition of the several species it is not yet possible to state. In addition to the confusion characteristic of *Cannabis* nomenclature, the problem has been complicated by failure of chemists to have voucher specimens identified and filed away in herbaria. Even more uncertainty was engendered by the recognition of the great chemical variation in races of *C. sativa* or in individual races of this species grown under differing conditions. Most of the chemical studies reported in the literature were based undoubtedly on *C. sativa*. Some chemists may have had true *C. indica* at hand. Probably relatively few analyses were done on material attributable to *C. ruderalis*.

Since *C. sativa* is a triple-purpose economic plant, it has, over its thousands of years as an important economic plant, been selected for characteristics desired by the peoples of the area where it was cultivated. Where the narcotic properties led to its role in religious rites, races rich in the intoxicating compounds tended to be selected; where the nutritive value of the seed-oil was important, races high in this constituent were selected; where the plant has been valued for its fibre, races productive in long and strong fibre were those most desired. It is still not un-

with depression in which the subject may sink into a moody reverie or experience states of panic and fear of death. The perception of time is disturbed. Extremely vivid hallucinations may be experienced; these are often pleasant and may have sexual overtones. As with other psychotomimetic substances, there may be extensive variation of effect with the personality of the subject.<sup>441</sup> Variation of effects from crude *Cannabis* may also be attributed to the well recognized variability in chemical composition of the plant material.

A study with pure (-)- $\Delta^1$ -THC by Isbell and others<sup>442</sup> showed that the effective dose in man is 300-480 mcg/kg orally or 200-250 mcg/kg by smoking.

Whether or not hasheesh should be called an addictive drug is a matter of definition. Organic or physiological dependence, as evidenced by characteristic withdrawal symptoms, definitely does not develop, but habituation or psychic dependence may follow its continued use.

*Cannabis sativa* Linnaeus, Sp. Pl. (1753) 1027.

Robust, rank, erect, weedy annual herb up to 18 feet in height (usually smaller), normally (except in some cultivated races) dioecious; dimorphic: staminate plants tall, slender, dying after anthesis, pistillate stockier, more foliose in region of inflorescence. Stems furrowed, often hollow, roundish or angular in cross section, scabrous, resin-dotted on young growth; degree of branching depending on conditions of growth. Leaves opposite near base of stem, spirally arranged above and on branches, digitate, petioles 4-6 cm long, stipules small, triangular, persistent, (uppermost leaves sometimes with single leaflet); leaflets membranaceous, sessile, 3-15 (usually 8-10), linear to lanceolate, long-acuminate, coarsely serrate, 6-11 cm long, 0.2-1.5 cm wide, upper surface dark green with stiff, conic trichomes, nether surface pale green with distant brownish resin-dots and strigose hairs. Staminate inflorescences axillary or terminal cymose panicles: flowers pedicellate, pendent at maturity, falling after shedding pollen; tepals greenish, sometimes yellow or brownish purple, quincuncial in bud, spreading at anthesis, usually about 5 mm long, stamens 5, anthers pendent, dehiscing by apical pore, glandular



hairs at junction of anther lobes. Pistillate inflorescences axillary or terminal, congested series of false spikes (associated axis, leaves, petioles and bracts usually densely provided with resinous-glandular hairs): flowers usually in pairs, sessile, each enclosed in membranous, dark green, perigynous bracteole, subtended by bract; perianth hyaline, entire, closely enveloping sessile ovary, style deeply bifid, 5 mm long, slightly nutant. Fruit akene, ovoid, slightly compressed, reticulate, sometimes brownish, covered by persistent calyx and enveloped by enlarged bract. Seed single, ovoid, about  $3-5 \times 2$  mm, shiny, ash-grey, endosperm fleshy, embryo curved.

Native to temperate parts of central Asia but widespread in temperate and dry tropical parts of both hemispheres as an adventive or naturalized weed.

Other species are:

*Cannabis indica* Lamarck, Encyl. Méth. 1 (1783) 695.

*Cannabis ruderalis* Janischewsky, Uchenye Zap. Cqs.

Sar. Univ. 2, pt. 2 (1924) 14.

#### MYRISTICACEAE

The Myristicaceae, belonging in the order Ranales, is pantropical and comprises about a dozen genera and from 300 to 350 species of trees; it is allied to the Annonaceae. The family is especially well represented in Asia and South America. Fatty oils and spices are the principal commercial products of the family. The hallucinogenic members belong to *Myristica* and *Virola*.

#### *Myristica* Cronovius

*Myristica* is a genus of trees of the Old World tropics. During the last century, the Myristicaceae was considered to be monogeneric, comprising only *Myristica*, a very large pantropical genus (including all the American representatives of the family), divided by various specialists into from seven to 13 sections or subgenera. In 1897, Warburg established the classification of the family as it is accepted by contemporary workers, recognizing the subgenera as genera, with *Myristica* represented by 120 species of Asia, especially Malaysia and Polynesia.

8/20

AFFIDAVIT OF SERVICE OF MATERIAL  
PERTAINING TO BRIEF

UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT  
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UNITED STATES OF AMERICA,

Appellee,

-vs-

Docket No. 74-2014

GARY KINSEY,

Appellant

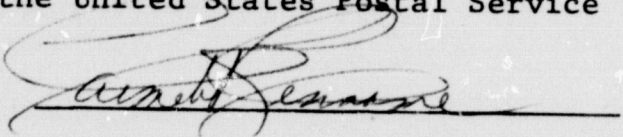
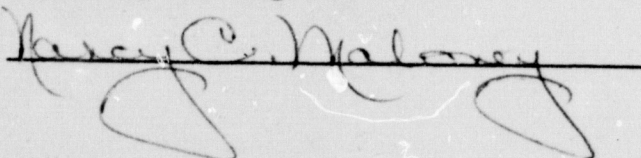
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STATE OF NEW YORK)  
COUNTY OF MONROE ) SS:  
CITY OF ROCHESTER)

CARMELA R. CENNAME, being duly sworn, deposes  
and says:

That she is not a party to this action;  
that she is over the age of 18 years and resides in the City of  
Rochester, County of Monroe and State of New York.

That on the 21st day of August, 1974, a copy  
of pages 34-37 of the book THE BOTANY AND CHEMISTRY OF HALLUCINOGENS  
was served upon Gerald Houlihan, Esq., United States Attorney,  
150 State Street, U. S. Courthouse, Rochester, New York 14614,  
and deposited in a post office official depository under the  
exclusive care and custody of the United States Postal Service  
within New York State.

Sworn to before me this  
14th day of August, 1974

NANCY C. MALONEY  
Notary Public in the State of New York  
MONROE COUNTY, N. Y.  
Commission Expires March 30, 1975



